

ABSTRACT OF THE DISCLOSURE

A concentration sensor which detects the concentration of a liquid reducing agent based on a heat transfer characteristic between two spaced positions is attached to a storage tank which stores the liquid supplied to a NO_x reduction catalytic converter. Then, the concentration is read out from the concentration sensor, and when the concentration is equal to or less than 0%, it is discriminated that the liquid in the storage tank is the water. Further, if the concentration is more than the predetermined concentration, it can be considered that an output from the concentration sensor becomes abnormal because the storage tank is empty. Therefore, it is discriminated that the storage tank is empty. On the other hand, when the concentration is more than 0% and also equal to or less than the predetermined concentration, it is discriminated that the liquid in the storage tank is the liquid reducing agent.